

## Assessment of Reserved Areas for Sustainable Ecotourism in Khmelnytskyi region, Ukraine

Volodymyr Ivanyshyn<sup>1</sup>, Oksana Bialkovska<sup>2</sup>, Oleh Chaikovskiy<sup>\*3</sup>, Iryna Semenyshyna<sup>4</sup>

<sup>1</sup>Higher Educational Institution “Podillia State University”, Kamianets-Podilskyi, Ukraine.

Email: rector@pdatu.edu.ua | ORCID: <https://orcid.org/0000-0003-1255-1638>

<sup>2</sup>Higher Educational Institution “Podillia State University”, Kamianets-Podilskyi, Ukraine.

Email: Ksenish05@gmail.com | ORCID: <https://orcid.org/0000-0002-8239-2700>

<sup>3</sup>Higher Educational Institution “Podillia State University”, Kamianets-Podilskyi, Ukraine.

Email: olehchaikovskiy@ukr.net | ORCID: <https://orcid.org/0000-0002-3175-242X>

<sup>4</sup>Higher Educational Institution “Podillia State University”, Kamianets-Podilskyi, Ukraine.

Email: isemenisina@gmail.com | ORCID: <https://orcid.org/0000-0001-9300-8914>

*\*Corresponding author*

**How to cite this paper:** Ivanyshyn, V., Bialkovska, O., Chaikovskiy, O. and Semenyshyna I. (2022). Assessment of Reserved Areas for Sustainable Ecotourism in Khmelnytskyi region, Ukraine. *Grassroots Journal of Natural Resources*, 5(4): 52-65. Doi: <https://doi.org/10.33002/nr2581.6853.050404>

**Received:** 22 October 2022

**Reviewed:** 09 November 2022

**Provisionally Accepted:** 15 November 2022

**Revised:** 23 November 2022

**Finally Accepted:** 30 November 2022

**Published:** 31 December 2022

Copyright © 2022 by author(s)

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



**Open Access**

*Editor-in-Chief*  
Prof. Dr. G. Poyyamoli  
*Executive Editor*  
Dr. Hasrat Arjjumend  
*Associate Editors*  
Dr. Maja Manojlovic  
Ms. Areej Sabir  
Dr. Usongo Patience



### Abstract

Ukraine has recently started promoting and developing some sectors of tourism despite its rich cultural heritage, natural resources and protected areas. Most visited tourist attractions are located in Kyiv, Odesa and Lviv, while the remote locations are less studied. To promote ecological tourism in urban territories, to properly manage reserved areas and maximize economic benefits for the local community, research on the assessment of reserved areas should be carried out. Khmelnytskyi region ranks third among administrative-territorial units in Ukraine with a high level of the conservancy. However, only limited reserved areas and natural monuments like “Podilski Tovtry”, “Verkhnie Pobuzhzhia” and “Malovanka” are at the centre of tourism interests. The present article reviews IUCN categories of reserved areas in Khmelnytskyi region in line with Davey’s management objectives and Leung’s management approach to tourism. Most of the natural monuments, national parks, and protected landscapes in the Khmelnytskyi region are suitable for tourism and recreation. Developing ecotourism will assist in attracting investors, and provide additional income to the local community along with creating jobs for temporarily displaced people during wartime in Ukraine.

### Keywords

Ecotourism; Protected areas; Khmelnytskyi region; IUCN, Visitor use, Management objectives

## Introduction

In the context of the pandemic and the restrictions it caused on the international tourism market, the countries began to intensify the development of domestic tourism, and Ukraine is no exception. The reorientation of the tourism market contributes to the demand for domestic tourism, in particular, rural green and ecological in particular. Hence, it is necessary to develop the territories comprehensively while creating a high-quality local tourism product. In the light of Russian aggression against Ukraine, the promotion and development of ecotourism are of vital importance because more than 153,500 internally displaced people (IDP) have arrived in the Khmelnytskyi region of Ukraine. It is twice more in comparison with other regions of Ukraine. In terms of the diversity of flora, counting more than 1700 species of plants, of which 116 are listed in the Red Book of Ukraine.

Ecotourism generates economic opportunities for the local people and guarantees the sustainable use of environmental resources (Farrell and Runyan, 1991). The perceived potential of ecotourism as an effective tool for sustainable development is the main reason why developing countries are now embracing it and including it in their economic development and conservation strategies (Kiper, 2013). Well-managed ecotourism can prevent the destruction of wildlife, can benefit human communities by preserving their cultures, and can provide revenue and incentives for nature conservation (Arjjumend, Shingo and Selemon, 2018; Kiper, 2013; Samia *et al.*, 2017). Overseas experience shows that, over the past two decades, many developing countries have experienced large population increase with declining or stagnant economic conditions. Ecotourism would offer a viable strategy to simultaneously make money and conserve resources (Drumm and Moore, 2005).

A World Bank report argues that the promotion of sustainable tourism in protected areas should be included in COVID-19 economic recovery plans, and it is an investment that creates local jobs, improves incomes and protects biodiversity (World Bank, 2021). The report examined four countries (Brazil, Fiji, Nepal and Zambia) for the benefits of investing in protected areas. The report also investigated the promotion of nature-based tourism in protected areas and its impacts on the economic development of the country. Nature-based tourism creates jobs, as the people are hired as hotel employees and tour operators, for example. It also boosts employment in other sectors as demand rises for tourism-related goods and services.

According to Leung *et al.* (2018), many of the questions need to be addressed well before a protected area is made available for tourism use, and the answers must connect with the conservation objectives of the protected area. In many developing countries, ecotourism can provide direct financial support for public, communal and private protected areas. To be successful, such tourism requires expert management, closely tuned and customized to local cultural contexts, and international market conditioning. It is supposed that, in case, local authorities should focus on developing and promoting ecotourism on the territory of the Khmelnytskyi region to retain additional jobs and to benefit from such activities. With the above background, it is important to analyze the ecological potential of the region and identify promising areas for the development of ecotourism in the Khmelnytskyi region of Ukraine. The region is one of the most interesting sites from the environmental perspectives (Mayorova *et al.*, 2021).

Increasingly, partnerships between conservation and tourism are contributing to changes in attitudes around the issues of biodiversity conservation and environmentally responsible business practices (Bushell and Bricker, 2016). According to World Conservation Union (IUCN), five nature reserves, except for strict reserves (Ia), regard tourism as a management objective to varying degrees (Dudley, 2008). Buckley (2020) and Harris, Rigolon and Fernandez (2021) state that such tourism can contribute to the improvement of the physical and mental health of visitors. The research findings from Blanco-Cerradello *et al.* (2022) indicate that different types of resources affect different dimensions of sustainable performance; for instance, natural resources affect the local quality of life and the area's sustainability, certain created resources can unite and

foster local communities and support environmental sustainability, and some supporting resources can attract tourists.

Leung *et al.* (2018) designed guidelines that provide valuable information, management and monitoring tools for assessing the tourist potential of protected areas. The guidelines highlight best practices in providing tourism services in protected areas of Jordan, China, Hong Kong, Brazil, Serbia, Peru and Australia. Leung *et al.* (2018) also notes that the impacts of tourism on protected areas fall into three broad, often overlapping, categories: environmental, economic, and social. The economic benefits from mountain gorilla tourism in Volcanoes National Park (Rwanda) include employment opportunities offered to local people (including ex-poachers) as guides, trackers and anti-poaching guards. To generate financial, political and popular support for nature conservation in Jordan, The Royal Society for the Conservation of Nature worked directly with local villagers and Bedouin communities engaging in income-generating projects and employment opportunities while utilising the Reserve's natural beauty and wildlife. Their activities included small handicraft enterprises and a range of tourism facilities, including campsites, guesthouses and an ecolodge. There are also economic benefits to protected areas, such as through employment in support businesses and spin-offs. Examples include travel agents or e-booking sites, who are paid to arrange accommodation, travel and activities; retailers who sell articles made by local craftspeople, or food that is produced locally, to tourists, and as local providers of products and services that support tourism enterprises, retailers and tourists themselves (Eagles *et.al.*, 2002). Natural protected areas are primarily managed to protect biodiversity but can often provide recreation-related economic benefits to local communities (Lane, 2001). Enhancing economic opportunity is one of the potential benefits of tourism in protected areas (Eagles and McCool, 2002). Tourism planning and development aim to increase jobs and income for residents, stimulate new tourism enterprises, encourage local manufacture of goods, improve living standards, generate local tax revenues, and increase funding for protected areas and local communities (Blanco-Cerradelo *et.al.*, 2022).

Several scientists explored the development prospects of ecological tourism in Ukraine (Martsenyuk-Rozaronova and Nechiporuk, 2018; Rutynskyi and Topornytska, 2019; Tranchenko, Yavorska and Kolomiyets, 2020), the peculiarities of its development at rural territories (Oleynik and Yaromenko, 2022; Pelepchuk, Bobro and Dyshel, 2019; Ivanyshyn and Pecheniuk 2019; Ivanyshyn and Bialkovska, 2020), ecological tourism at different regions of Ukraine (Adamenko and Miroshnichenko, 2021; Kulish, 2021; Davydiuk and Tarhonia, 2020; Dyshkantyuk, Potemkin, and Oliynyk, 2020; Pelepchuk, Bobro and Dyshel, 2019). References of visitor potential are discussed by Davey (1998), Dudley (2008), Dudley Shadie and Stolton (2013), Spenceley (2015) and Leung *et al.* (2018).

The analysis of literature showed that most research on the Khmelnytskyi region is carried out in the context of peculiarities of the nature reserve fund of the region: "Verkhnie Pobuzhzhia" National Park (Andrienko *et al.*, 2007), "Malovanka" Regional Landscape Park in context of alga (Vlasyuk and Demchenko, 2006), Khmelnytskyi Nature Reserve Fund in a context of Emerald Network Development (Mayorova *et.al.*, 2021). Most of the research revolves around the touristic potential of Podilski Tovtry and Verkhnie Pobuzhzhia National Parks. Podilski Tovtry National Park is described as a sample of water tourism in the textbook "Conservation in Ukraine" (Grodzinsky and Stetsenko, 2003). Small tourist shelters are created for comprehensive services to tourists (food, communications, rental of tourist equipment, overnight stay, entertainment, etc.) who travel around the reservoir on watercraft on the shores of the Dniester reservoir, mainly in the Bakota Bay zone. Due to exceptional natural resources in protected areas of the Khmelnytskyi region, tourism revenue is the main source of income for protected area management and improving the economic status of locals and non-locals. However, studies on the touristic potential of protected areas in Ukraine and the Khmelnytskyi region, in particular, are limited, and it is necessary to critically review the available literature to improve protected area management and promote responsible/sustainable tourism development in Ukraine in general and Khmelnytskyi region in particular.

A cultural heritage also plays a crucial role in achieving inclusive and sustainable development of the region. It is highly valued by both residents and visitors. There are more than 312 architectural, archaeological and historical sites of importance, and places of memorial and art in Khmelnytskyi region (Anonymous, 2022). Three of them belong to UNESCO World Heritage Sites, such as Paragraph Struve Geodetic Arc "Katerynivka" in Katerynivka village, Item Struve Geodetic Arc "Felshtyn" in Gvardijske village, and Item Struve Geodetic Arc "Baranivka" in Baranivka village (Bordun, 2018). However, studies on the touristic potential of protected areas in Ukraine and the Khmelnytskyi region, in particular, are limited, and it is necessary to study to improve protected area management and sustainable tourism development in Ukraine in general and Khmelnytskyi region in particular.

The main objective of the present study is to provide data-driven decisions considering the number, types, and total area of environmental objects and list of the Emerald sites of the Khmelnytskyi region, to examine the naturally reserved territory of the Khmelnytskyi region, and to assess naturally reserved fund indicators conforming to management objectives, and to determine the touristic and recreation potential of the region.

## Potential of Khmelnytskyi Region

Khmelnytskyi region is considered one of the promising regions for tourism development in Ukraine. This is due to the peculiarities of its geographical location, favourable climate, the richness of natural resources, and historical and cultural heritage. However, there are only 56 small farmsteads in the Khmelnytskyi region (Khmelnytskyi Tourism, 2021). They offer visitors accommodation, food, excursions, participation in ceremonies, and workshops in folk traditions. The estates offer active entertainment (cycling, boating, picking up mushrooms, berries, medicinal plants, fishing, and horseback riding, etc.) and passive entertainment (sauna, herbal tea, cosmetic procedures, etc.). Touristic locations are distributed unevenly. There are three destinations in protected areas (Hrytsiv, Rudkivtsi, Otrokiv) where the tourists have adopted a wide range of recreational activities, such as cycling, boating, fishing and horseback riding.

The territory of the Khmelnytskyi region is 20,629 km<sup>2</sup> (3.4% of the whole territory of Ukraine). There are 13 towns and 24 villages in the Khmelnytskyi region. The total population is 1,240,624. Nature Reserve Fund of Khmelnytskyi region is a unique habitat of rare species, most of which are protected at the international and European levels and are of particular value under conservation conditions. The Nature Reserve Fund of the region is made up of sites of different categories: national natural parks, reserves, natural monuments, and protected tracts with the preservation of natural communities and landscapes.

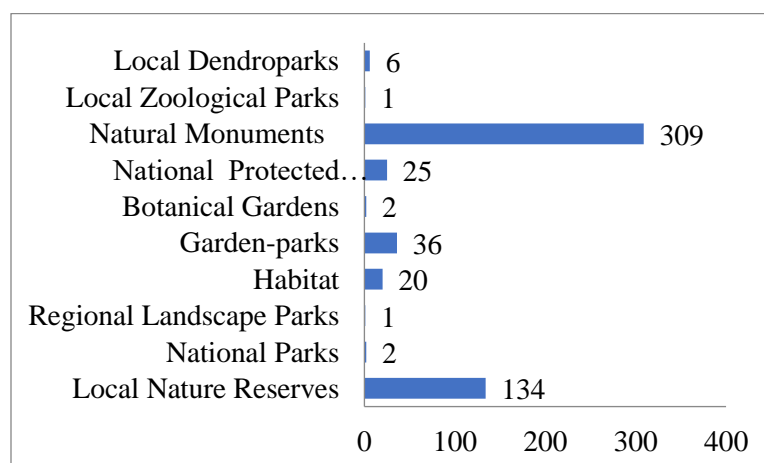


Figure 1: The number of reserved areas in the Khmelnytskyi region

## Nature Reserve Fund in Khmelnytskyi Region

Today, there are 522 objects with a total area of 328,467 hectares in the Nature Reserve Fund of the region (Environmental Passport of Khmelnytskyi region, 2021). Figure 1 shows the number of different reserved areas in the Khmelnytskyi region. The following categories of protected areas exist in the region: National Parks, Natural Monuments, Habitat, Natural Protected Landscape and Managed Resource Protected Areas (Figure 1) are available in the Khmelnytskyi region. As we can see, the Nature Reserve Fund is represented by all categories of protected objects, except for natural and biosphere reserves. Almost 80% of the area of the Nature Reserve Fund is occupied by the National Nature Park "Podilski Tovtry". Data from the Environmental Passport of the Khmelnytskyi region (2021) demonstrate that the Nature Reserve Fund of the Khmelnytskyi region is characterized by high rates of conservation, the density of objects and landscape representation, and a low insularization index. On the territory of the region, there are two national natural parks, which occupy more than 80% of the Nature Reserve Fund area: "Podilski Tovtry" (79.5%) and "Male Polissia" (2.7%). On the territory of the National Park "Podilski Tovtry," there is a beech forest on the Eastern border of the range "Satanivska Dacha", which is included in the UNESCO protection list within the framework of preserving the eastern part of the natural object "Beech virgin forests and ancient forests of the Carpathians and other regions of Europe".

As part of the study, all the available protected sites of Khmelnytskyi region were divided in compliance with IUCN WCPA<sup>1</sup> categories. The current IUCN WCPA categories (IUCN, 2008)) are as follows:

- I. Strict protection: Ia. Strict Nature Reserve Ib. Wilderness Area
- II. National Park
- III. Natural Monument or Feature
- IV. Habitat/Species Management Area
- V. Protected Landscape/ Seascape
- VI. Protected Area with Sustainable Use of Natural Resources.

According to IUCN categories (IUCN, 2008), there are no sites of strict protection (strict nature reserve and wilderness areas) in the Khmelnytskyi region. The allocation of protected areas of the Khmelnytskyi region under the IUCN categories is depicted in figure 2.

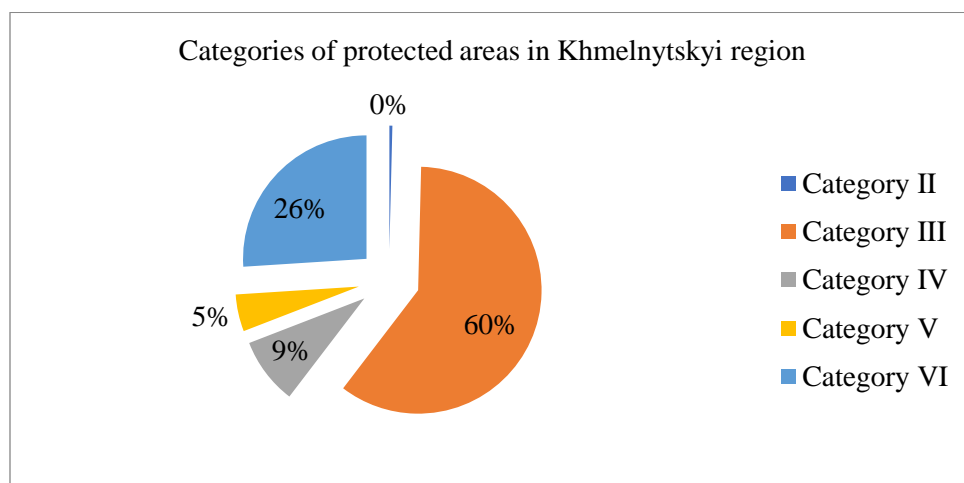


Figure 2: IUCN Categories of Protected Areas in the Khmelnytskyi region

<sup>1</sup> <https://www.iucn.org/our-union/commissions/world-commission-protected-areas>



Taking into account the fact that we examine natural protected areas of the region in the context of tourism and recreation we use the varying degrees of importance (priority), where each category is given a score: 1 is the primary objective, 2 is the secondary objective, 3 is potentially applicable objective, 0 is not applicable objective.

This system of categories and management objectives was created to recommend that countries use the best world practices in national system of planning for protected areas. The percentage of strict conservation in the Khmelnytskyi region is equal to 0 since there are no protected areas of the 1<sup>st</sup> category of protection in the region. Table 1 shows that all the available categories of protected areas (II - VI) in the Khmelnytskyi region have high scores (primary and secondary objectives) and can be used in tourism and recreation. National Parks, for example, can be used for inspirational, educational, cultural and recreational purposes at a level which will maintain the area in a natural or near-natural state. Natural Monuments provide opportunities for research, education, interpretation and public appreciation. Limited areas of the Habitat/Species Management Area can be used for public education and appreciation of the characteristics of the habitats concerned and of the work of wildlife management. Protected Landscapes can provide opportunities for public enjoyment through recreation and tourism appropriate in type and scale to the essential qualities of the areas. Managed Resource Protected Areas can contribute to regional and national development.

Table 1: Management objectives of protected areas of IUCN categories

Management objectives	Categories according to IUCN						
	Ia	Ib	II	III	IV	V	VI
Research	1	3	2	2	2	2	3
Wildlife Conservation	2	1	2	3	3	0	2
Conservation of species and genetic diversity	1	2	1	1	1	2	1
Maintaining environmental services	2	1	1	0	1	2	1
Protection of specific natural/cultural features	0	0	2	1	3	1	3
Tourism and recreation	0	2	1	1	3	1	3
Education	0	0	2	2	2	2	3
Sustainable use of natural ecosystem resources	0	3	3	0	2	2	1
Supporting cultural/traditional values	0	0	0	0	0	1	2

Source: Davey (1998); IUCN (2008)

Leung *et al.* (2018) adapted IUCN Protected Area Categories to management approach to tourism. The same was reiterated by Blanco-Cerradelo *et al.* (2022), Dudley (2008), Dudley, Shadie and Stolton (2013) and Spenceley *et al.* (2015).

Data in table 2 show that the primary management objective of protected areas in the Khmelnytskyi region is tourism, visitor use and experience, recreation visitation and commercial tourism. A range of recreation opportunities is provided with associated facilities and services almost within all protected areas. Commercial tourism is common for IV, V, and VI categories of protected areas. It should be mentioned that 26% and 60% of protected areas, respectively, in the Khmelnytskyi region (Figure 2) refer to the II and III categories. It means that a range of recreation opportunities typically provided through zoning, facility development and visitor services are preferable in the protected areas. The critical factor is also the types of visitors welcomed in protected areas. The data in table 2 shows that all types of visitors - individuals, researchers, commercial users, tourists and recreationists, spiritual and cultural users and commemorative users - can promote tourism activities in the protected areas.

According to information materials prepared by the Department of Nature Reserve Fund of the Ministry of Environmental Protection and Natural Resources of Ukraine, the largest percentage of conservation among administrative-territorial units is in Kyiv, Ivano-Frankivsk, Khmelnytskyi and Zakarpattia regions. The smallest is in Vinnytsia, Kharkiv, Cherkasy, Dnipropetrovsk and Mykolaiv regions. The percentage of conservation areas in the Khmelnytskyi region is the highest in Ukraine and amounts to 15.93%. The figure 3 depicts the percentage of conservation in Ukraine, which is 7.1% overall; 15.9% in Ivano-Frankivsk, 13.7% in Chernivtsi, 14.4% in Zakarpattia, 12.2% in Kyiv, 9.3% in Rivne, 8.9% in Ternopil, 4.6% in Zhytomyr, and 2.5% in Vinnytsia.

Table 2: IUCN Protected Area Categories in Khmelnytskyi region and its Management Approach to Tourism and Visitor Use

IUCN Protected Area Category	Approach to tourism and visitor use	Types of visitors					
		Individual	Researcher	Commercial users	Tourists and recreationists	Spiritual and cultural users	Commemorative users
II. National Park	<ul style="list-style-type: none"> <li>• Visitor use and experience is often a management objective</li> <li>• A range of recreation opportunities typically provided through zoning, facility development and visitor services (countries have marked differences in their attitudes to tourism accommodation within protected areas)</li> </ul>	+	+	+	+	+	+
III. Natural Monument	<ul style="list-style-type: none"> <li>• Visitor use and experience is often a management objective</li> <li>• Recreation opportunities are typically provided to facilitate feature protection and public understanding</li> </ul>	+	+	+	+	+	+
IV. Habitat/Species Management Area	<ul style="list-style-type: none"> <li>• Recreation visitation and commercial tourism are usually management objectives</li> <li>• A range of recreation opportunities is provided with associated facilities and services</li> <li>• Commercial tourism common for wildlife viewing</li> </ul>	+	+	+	+	+	+
V. Protected Landscape/Seascape	<ul style="list-style-type: none"> <li>• Tourism is usually a management objective</li> <li>• A range of recreation opportunities is provided with associated facilities and services</li> <li>• Commercial tourism common</li> </ul>	+	+	+	+	+	+
VI. Managed Resource Protected Area	<ul style="list-style-type: none"> <li>• Recreation visitation and commercial tourism can be key objectives</li> <li>• A range of recreation opportunities is provided with associated facilities and services</li> <li>• Commercial tourism common</li> </ul>	+	+	+	+	+	+

Source: Leung et al. (2018)

Notably, eight protected areas belong to the Emerald Network established to protect species and habitats that are threatened to become extinct on a continental scale. Currently, the Network consists of 271 sites, covering 10% of Ukraine's area. Table 3 shows the Emerald sites of the Khmelnytskyi region.

All the Emerald sites of the Khmelnytskyi region are characterized by high coefficients of floristic representativeness and uniqueness. Therefore, the sites of the Emerald Network make it possible to preserve the unique ecosystems of Podillia, which are the natural heritage of the Khmelnytskyi region and Europe as a whole. There are two national natural parks "Podilsky Tovtry" (the largest park in Europe) and "Male Polissia" in the region. In addition, there are many botanical monuments in the Khmelnytskyi region, in particular, the Holy Lake in Iziaslav district, and geological monuments, such as the cave "Atlantis" in the village of Zavallia in Kamianets-Podilskyi district, Bakota Rock Monastery (Environmental Passport of Khmelnytskyi region, 2021).

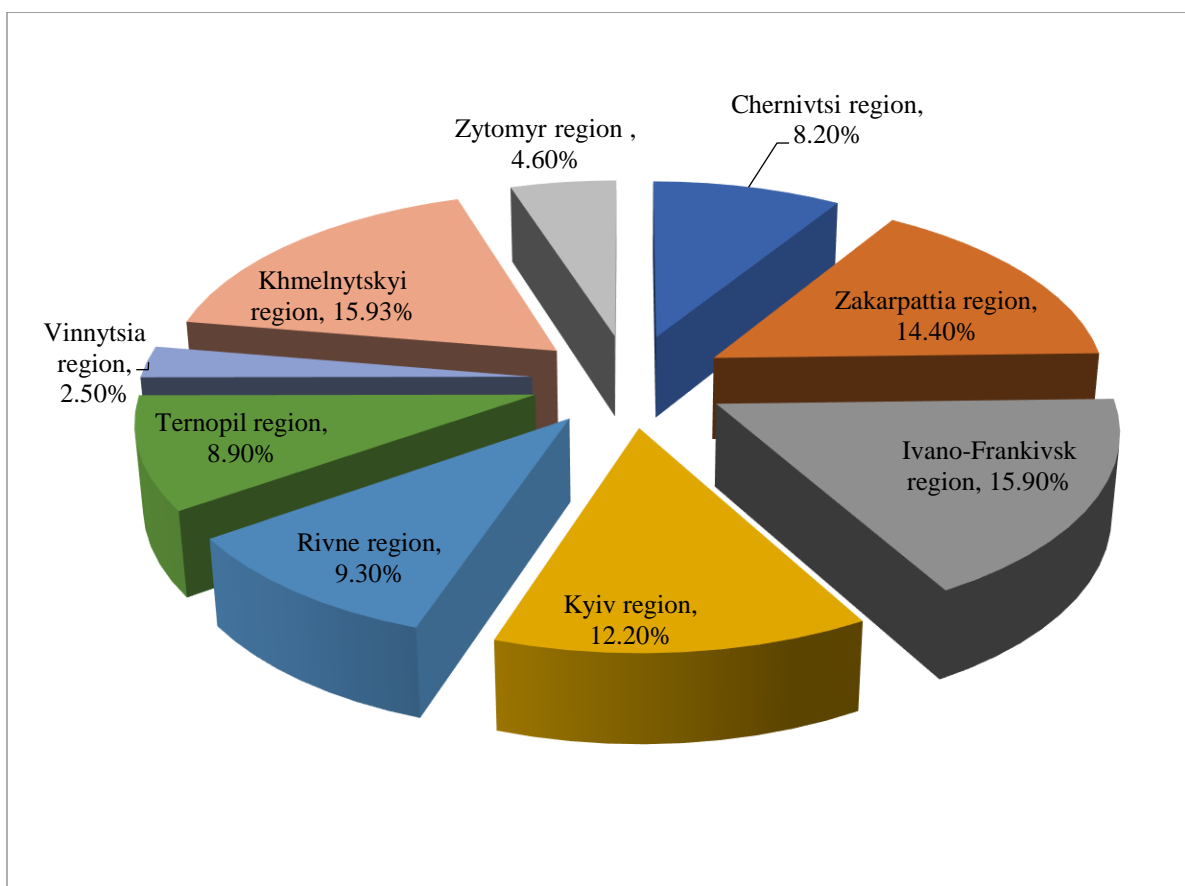


Figure 3: The Percentage of Conservation Areas of Ukrainian regions (Source: Ministry of Environmental Protection and Natural Resources of Ukraine, 2022)

### Towards Ecotourism Development in Khmelnytskyi Region

The Development Strategy of the Khmelnytskyi region for 2021-2027 discloses that the National Nature Park "Podilsky Tovtry", the National Historical and Cultural Reserve "Kamianets", and the State Historical and Cultural Reserves "Tovtry" and "Samchiki" have the greatest potential for tourism and recreation activities. The Strategy provides a set of measures to improve the management system of the tourism industry, create conditions for the implementation of investment projects, increase the volume of tourist



services by expanding inbound and local tourism, expand the range of tourist services, increase the efficiency of recreational resources use and objects of historical cultural heritage. Among the factors that slow the development of the tourism industry is the insufficient development of the information infrastructure of the tourism business, which does not allow local and foreign tourists to quickly receive useful information about the tourist and recreational opportunities of Khmelnytskyi region to book and reserve tourist services in advance. To increase the role of tourism, it is necessary to strengthen its marketing component by identifying the most attractive tourist and recreational offers for tourists by conducting research for the tourist market.

Table 3: List of the Emerald sites of the Khmelnytskyi region

<i>Title of the site</i>	<i>Area</i>	<i>Number of bird species</i>	<i>Number of other species</i>	<i>Habitats</i>
Podilsky Tovtry National Park	261316	37	42	28
Iziaslavsko-Slavutskyi	32329	38	12	18
Maliiovanka Regional Landscape Park	16919	36	16	18
Kuzmysnyskyi	980	34	4	5
Barskyi	2815	32	6	12
Bereznianskyi	128	26	4	1
Starosyniavskyi	518	25	6	4
Verkhnie Pobuzhzhia	13339	20	31	15

Source: Khmelnytskyi Regional State Administration (2020)

Ministry of Environmental Protection and Natural Resources of Ukraine (2022) ranks the Khmelnytskyi region first in the provision of recreational land in Ukraine. it's the natural recreational resources in this region take second place in the structure of natural and recreational potential of the country. However, today the recreational potential of the region is underutilized, which is explained by the peculiarities of regional management and weak promotion of the region for the needs of tourism and recreation.

The analysis of research on different aspects of ecological tourism from 1991 to 2022 showed that ecological tourism benefits in generating economic opportunities and preserving and expanding the Nature Reserve Fund of the country. Some scientists (Drumm and Moore, 2005; Farrell and Runyan, 1991; Kiper, 2013; Eagles *et.al.*, 2002) state that such type of tourism is particularly successful, especially in developing countries. Indirect spending by tourists may include uniform manufacture, supplies, building materials, furniture manufacture, local crafts for interior decoration in hotel rooms, waste disposal (including recycling), concession fees paid by the private sector to provide services to visitors and taxes (Leung *et al.*, 2018). As can be seen, the positive economic impacts of tourism in protected areas can, directly and indirectly, benefit both residents and protected areas. In the local context, authorities of the Khmelnytskyi region can create new working opportunities to internally displaced people in the Khmelnytskyi region.

It is needed to locate the tourist and recreation objects in other Protected Landscapes, Natural Reserves, National Parks and National Monuments of the region. These recreational areas fully meet the requirements of ecological tourism. In contrast to conducting research on "Podilski Tovtry" National Park, where the recreation area is determined as a model of water tourism, it is proposed to extend the list of existing other touristic activities. The tourist routes, excursions and walking ecological and educational trails can be organized for sightseeing with the equipped places for overnight stays such as predatory and bivouac parking lots. Amateur and sports fishing, picking up mushrooms, wild fruits and berries, and photography ("quiet hunting", "bird watching") can be arranged in specially designated and appropriately equipped areas. The

eco-educational trails can be considered with short-term rest in specially equipped places the most priority types of recreational activities in the Khmelnytskyi region.

## Conclusions

Recently, there have been significant disparities in the development of tourism in Ukraine. Foreign tourists most actively visit popular regions of Ukraine, such as Kyiv, Odesa and Lviv. Tourism in the Khmelnytskyi region is not the predominant sector of the Khmelnytskyi region's economy, but the region has significant potential for promoting ecotourism. Khmelnytskyi region ranks third in Ukraine – after the Crimea and the Carpathians. Remarkably, eight protected areas in the Khmelnytskyi region belong to the Emerald Network. This means that endogenous plants and animals belong to the unique ecosystem of the country. At present, more than 15% of the region's area belongs to the Nature Reserve Fund. The majority of protected area categories (II and III) belong to National Parks and Monuments. The primary purposes of protected areas in the Khmelnytskyi region are visitor use, tourism and commercial tourism. Recreation opportunities are typically provided to facilitate nature protection and public understanding within of categories IV, V and VI. The implementation of ecological tourism will promote additional income for the local community and provide employment not only to residents but also to internally displaced people. Having explored the number of the reserved area of the Khmelnytskyi region, the importance of these objects for the sustainable development of protected area tourism in the region can be considered. Future research should focus on the development of rural green tourism in protected areas of the Khmelnytskyi region in the context of decentralization.

## References

- Adamenko, M. and Miroshnichenko, S. (2021). System-algorithmic approach to planning routes of research of ecotourism objects and local monuments of Kharkiv region. *Technogenic and Ecological Safety*, (9(1/2021)): 44–51. DOI: <https://doi.org/10.52363/2522-1892.2021.1.7>. (In Ukrainian)
- Andrienko, T.L., Kazimirova, L.P., Bilyk, R.G., and Matveev, M.D. (2007). Verkhnie Pobuzhzhya - designed national nature park of Ukraine (Khmelnytskyi region). Kamianets-Podilskyi: PE Moshynskyi. (In Ukrainian)
- Anonymous (2022). Cultural heritage monuments in Khmelnytskyi Oblast (2022). Available online at: [https://commons.wikimedia.org/wiki/Category:Cultural\\_heritage\\_monuments\\_in\\_Khmelnytskyi\\_Oblast](https://commons.wikimedia.org/wiki/Category:Cultural_heritage_monuments_in_Khmelnytskyi_Oblast) [accessed 1 December 2022].
- Arjjumend, H., Shingo S. and Selemon T. F. (2018). Ecosystem services of forest ecosystem in Nech Sar National Park, Ethiopia: identifying the challenges and conservation measures. *J Glob Resour* 4(02): 18-29.
- Blanco-Cerradelo, L., Diéguez-Castrillón, M.I., Fraiz-Brea, J.A. and Gueimonde-Canto, A. (2022). Protected Areas and Tourism Resources: Toward Sustainable Management. *Land*, 11(11): 2059. DOI: <https://doi.org/10.3390/land11112059>.
- Bordun, O. (2018). UNESCO-Ukraine (1). Available online at: [https://www.researchgate.net/publication/328981410\\_UNESCO-Ukraine\\_1](https://www.researchgate.net/publication/328981410_UNESCO-Ukraine_1) [accessed 1 December 2022].
- Buckley, R. (2020). Nature tourism and mental health: Parks, happiness, and Causation. *Journal of Sustainable Tourism*, 28(9): 1409–1424. DOI: <https://doi.org/10.1080/09669582.2020.1742725>
- Bushell, R., Bricker, K. (2016). Tourism in protected areas: Developing meaningful standards. *Tourism and Hospitality Research*, 17(1): 1-15. DOI: <https://doi.org/10.1177/1467358416636173>.
- Davey, A. (1998). *National System Planning for Protected Areas*. Gland, Switzerland and Cambridge, UK: IUCN.

- Davydiuk, Y. and Tarhonia, K. (2020). Development of ecotourism as the tool for saving the natural and recreational potential of Zhytomyr region. *Scientific Notes of Taurida National V.I. Vernadsky University. Series: Economy and Management*, 31(70(1)): 190-195. DOI: <https://doi.org/10.32838/2523-4803/70-1-33>. (In Ukrainian)
- Drumm, A. and Moore, A. (2005). *Ecotourism Development: A Manual for Conservation Planners and managers*. Nature Conservancy. Available online at: [https://www.researchgate.net/publication/261634491\\_Ecotourism\\_Development\\_A\\_Manual\\_for\\_Conservation\\_Planners\\_and\\_Managers\\_Volume\\_IIThe\\_Business\\_of\\_Ecotourism\\_Development\\_and\\_Management](https://www.researchgate.net/publication/261634491_Ecotourism_Development_A_Manual_for_Conservation_Planners_and_Managers_Volume_IIThe_Business_of_Ecotourism_Development_and_Management). [accessed 29 November 2022]
- Dudley, N. (2008). *Guidelines for applying protected area management categories*. Gland, Switzerland: IUCN. DOI: <https://doi.org/10.2305/iucn.ch.2008.paps.2.en>
- Dudley, N., Shadie, P. and Stolton, S. (2013). Guidelines for Applying Protected Area Management Categories Including IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types. Best Practice Protected Area Guidelines Series No. 21. Gland, Switzerland: IUCN. Available online at: <https://portals.iucn.org/library/node/30018>. [accessed 1 April 2022]
- Dyshkantuk, O., Potemkin, L. and Oliynyk, V. (2020). Determination of the ecological potential of territories for the development of ecotourism in the Vinnytsia region. *Economy and society*, 22. Available online at: <https://economyandsociety.in.ua/index.php/journal/article/view/134/129> [accessed on 23 January 2022]. DOI: <https://doi.org/10.32702/2307-2105-2018.11.57>. (In Ukrainian)
- Eagles, P. F. and McCool, S. F. (2002). Tourism, protected areas and local communities. *Tourism in National Parks and Protected Areas: Planning and Management*: 187–209. DOI: <https://doi.org/10.1079/9780851995892.0187>
- Environmental Passport of Khmelnytskyi region (2021). Khmelnytskyi Regional Military Administration, Khmelnytskyi. Available online: [https://www.adm-km.gov.ua/?page\\_id=7157](https://www.adm-km.gov.ua/?page_id=7157). [accessed on 23 August 2022]. (in Ukrainian)
- Farrell, B.H. and Runyan, D. (1991). Ecology and tourism. *Annals of Tourism Research*, 18(1): 26–40. DOI:10.1016/0160-7383(91)90037-c.
- Grodzinsky, M.D. and Stetsenko, M.P. (2003). *Conservation in Ukraine: Textbook*. Kyiv: Geographica. (In Ukrainian)
- Harris, B., Rigolon, A., and Fernandez, M. (2021). Hiking during the covid-19 pandemic: Demographic and visitor group factors associated with public health compliance. *Journal of Leisure Research*, 53(3): 331–339. DOI: <https://doi.org/10.1080/00222216.2021.1916797>
- IUCN (2008). Guidelines for Protected Area Management Categories, IUCN - The World Conservation Union, Gland, Switzerland.
- Ivanyshyn, V. and Bialkovska, O. (2020). Problems and prospects of human potential development in rural areas of Ukraine. *University Economic Bulletin*, 46: 76-82.
- Ivanyshyn, V. and Pecheniuk, A. (2019). Theoretical and methodical aspects of centres of rural green tourism. *Market Infrastructure*, 33: 88-95. DOI: <https://doi.org/10.32843/infrastruct33-13>.
- Khmelnytskyi Regional State Administration (2020). The Verkhovna Rada of Ukraine registered a bill on the territories of the Emerald Network. Available online at: <https://www.adm-km.gov.ua/?p=86135> [accessed on 26 September 2022] (In Ukrainian)
- Khmelnytskyi Tourism (2021). Available online at: <https://turist.km.ua/ua/2017/07/14/ukrayinska-osel-sadibi-yaki-nadayut-poslugi-u-sferi-silskogo-turizmu-na-hmelnichchini/>
- Kiper, T. (2013). Role of Ecotourism in Sustainable Development. *Advances in Landscape Architecture*. Available online at: [https://pdfs.semanticscholar.org/805a/dd79d77568fc7780e07c0c777bf09b3054b2.pdf?\\_ga=2.129787466.7527441.1665750846-1549531666.1665750846](https://pdfs.semanticscholar.org/805a/dd79d77568fc7780e07c0c777bf09b3054b2.pdf?_ga=2.129787466.7527441.1665750846-1549531666.1665750846). [accessed on 20 September 2022]. DOI:10.5772/55749.

- Kulish, N. (2021). Religious Tourism in Khmelnytskyi Region. *University Scientific Notes*, 130–139. DOI: <https://doi.org/10.37491/unz.81.11>. (in Ukrainian).
- Leung, Yu-Fai, Spenceley, Anna, Hvenegaard, Glen, and Buckley, Ralf (eds.) (2018). *Tourism and visitor management in protected areas: Guidelines for sustainability*. Best Practice Protected Area Guidelines Series, 27, Gland, Switzerland: IUCN: 120.
- Martsenyuk-Rozaronova, O.V. and Nechiporuk, V.M. (2018). State, problems and prospects for development of tourism in Ukraine. *Efektivna ekonomika*, (11). DOI: <https://doi.org/10.32702/2307-2105-2018.11.57>. (in Ukrainian).
- Mayorova, O. Y., Kovalchuk, I. I., Prokopiak, M. Z. and Kryzhanovska, M. A. (2021). The Nature Reserve Fund of Khmelnytskyi Region in the Context of the Emerald Network Development. *Man and Environment. Issues of Neoecology*, (35):131-139. DOI: <https://doi.org/10.26565/1992-4224-2021-35-12>. (in Ukrainian).
- Ministry of Environmental Protection and Natural Resources of Ukraine (2022). Information and analytical materials. The Percentage of Conservation Areas of Ukrainian regions. Available online: <https://wownature.in.ua/wp-content/uploads/2021/05/Dovidka-PZF-2020-V3.0-.pdf>. [accessed on 26 September 2022]
- Oleynik, V. and Yaromenko, S. (2022). Problems and Prospects of Development of Green Rural Tourism in Ukraine. *Regional Formation and Development Studies*: 67–73. DOI: <https://doi.org/10.15181/rfds.v6i1.2330>. (In Ukrainian)
- Pelepchuk, O., Bobro, E. and Dyshel, G. (2019). Influence of environmental factors on the physical development of urban and rural areas in the Odessa region. *Ecological Sciences*, 4(27): 33–37. DOI: <https://doi.org/10.32846/2306-9716-2019-4-27-6>. (In Ukrainian)
- Rutynskyi, M. and Topornytska, M. (2019). Social and geographic analysis of modern tendencies, problems and prospects for the revival of the palette of brand destinations of ethno-festival tourism in the western region of Ukraine in the current crisis realities. *Geography and Tourism*, (46): 3–18. DOI: <https://doi.org/10.17721/2308-135x.2019.46.3-18>. (In Ukrainian)
- Samia, D.S.M., Angeloni, L.M., Bearzi, M., Bessa, E., Crooks, K.R., D'Amico, M., Ellenberg, U., Geffroy, B., Larson, C.L., Loyola, R., Møller, A.P., Reed, S.E., Sadoul, B., Shannon, G., Tablado, Z., Zacarias, D. and Blumstein, D.T. (2017). Best Practices Toward Sustainable Ecotourism. *Ecotourism's Promise and Peril*: 153–178. DOI: [https://doi.org/10.1007/978-3-319-58331-0\\_10](https://doi.org/10.1007/978-3-319-58331-0_10).
- Spenceley, A., Kohl, J., McArthur, S., Myles, P., Notarianni, M., Paleczny, D., Pickering, C., and Worboys, G. L. (2015). Visitor management. *Protected Area Governance and Management*, Canberra: Australian National University Press: 715–750. DOI: <https://doi.org/10.22459/pagm.04.2015.23>
- Tranchenko, L.V., Yavorska, V.V. and Kolomiyets, K.I. (2020). Directions of activation of ecotourism development in Ukraine. *Odesa National University Herald. Geography and Geology*, 25(2(37)): 213–223. DOI: [https://doi.org/10.18524/2303-9914.2020.2\(37\).216572](https://doi.org/10.18524/2303-9914.2020.2(37).216572). (In Ukrainian)
- Vlasyuk, M.M. and Demchenko, E.M. (2006). Algae of reservoirs of the Malovanka Regional Landscape Park (Khmelnytskyi region). *Protected area in Ukraine*, 12(1): 25–31. (In Ukrainian)
- World Bank (2021). Investing in Protected Areas Reaps Big Rewards (2021). Available online at: <https://www.worldbank.org/en/news/press-release/2021/06/14/world-bank-report-investing-in-protected-areas-reaps-big-rewards> [accessed on 26 September 2022].

## Authors' Declarations and Essential Ethical Compliances

### *Authors' Contributions (in accordance with ICMJE criteria for authorship)*

<i>Contribution</i>	<i>Author 1</i>	<i>Author 2</i>	<i>Author 3</i>	<i>Author 4</i>
Conceived and designed the research or analysis	Yes	Yes	No	No
Collected the data	Yes	No	Yes	No
Contributed to data analysis & interpretation	Yes	Yes	No	No
Wrote the article/paper	Yes	No	Yes	Yes
Critical revision of the article/paper	No	Yes	Yes	Yes
Editing of the article/paper	No	Yes	No	Yes
Supervision	Yes	Yes	No	Yes
Project Administration	Yes	Yes	No	No
Funding Acquisition	No	No	Yes	No
Overall Contribution Proportion (%)	30	40	15	15

### *Funding*

No funding was available for the research conducted for and writing of this paper.

### *Research involving human bodies (Helsinki Declaration)*

Has this research used human subjects for experimentation? No

### *Research involving animals (ARRIVE Checklist)*

Has this research involved animal subjects for experimentation? No

### *Research involving Plants*

During the research, did the authors follow the principles of the Convention on Biological Diversity and the Convention on the Trade in Endangered Species of Wild Fauna and Flora? Yes

### *Research on Indigenous Peoples and/or Traditional Knowledge*

Has this research involved Indigenous Peoples as participants or respondents? No

### *(Optional) PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)*

Have authors complies with PRISMA standards? Yes

### *Competing Interests/Conflict of Interest*

Authors have no competing financial, professional, or personal interests from other parties or in publishing this manuscript.

### *Attribution and Representation*

All opinions and mistakes are the authors' own and cannot be attributed to the institutions they represent.

## Rights and Permissions

**Open Access.** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted

by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.